

WHAT IS CLAIMED IS:

1. A printing apparatus comprising:

an image forming section for carrying out image  
5 formation on a recording medium using an  
electrophotographic method;

a fixing unit for printing an image by fixing an image  
on the recording medium thereto by heating and pressurizing  
the recording medium, which is transported from said image  
10 forming section, with a pair of fixing pressurizing rollers;

a reversing mechanism for reversing the recording medium  
having its first side printed with the image, to print an  
image on a second side of the recording medium;

a paper refeed mechanism for refeeding the recording  
15 medium reversed by said reversing mechanism;

driving means for rotationally driving said image  
forming section and said fixing pressurizing rollers  
individually; and

control means for temporarily stopping, when printing  
20 an image on the second side of the recording medium subsequent  
to printing the first side of the recording medium,  
rotational driving of said fixing pressurizing rollers by  
said driving means after the recording medium passes through  
said fixing unit and before the second side undergoes  
25 printing.

2. The printing apparatus as claimed in claim 1, wherein

said control means, when printing the second side of the recording medium subsequent to printing the first side of the recording medium, stops rotational driving of said fixing pressurizing rollers after said recording medium has passed through said fixing unit, carries out paper refeeding after reversing the recording medium, starts the image formation of the second side and restarts the rotational driving of said fixing pressurizing rollers.

3. The printing apparatus as claimed in claim 1, wherein said control means, when printing the second side of the recording medium subsequent to printing the first side of the recording medium, stops rotational driving of said fixing pressurizing rollers after said recording medium has passed through said fixing unit, carries out paper refeeding after reversing the recording medium, starts the image formation of the second side, and restarts the rotational driving of said fixing pressurizing rollers previously by a period of time required for said fixing pressurizing rollers to reach a specified rotation speed by the time when the second side arrives at said fixing unit.

4. The printing apparatus as claimed in claim 1, wherein said control means, when printing the second side of the recording medium subsequent to printing the first side of the recording medium, temporarily reduces a high voltage

applied to an electrophotographic process after completing the image formation onto the first side of the recording medium.

5 5. The printing apparatus as claimed in claim 1, wherein said control means, when printing the second side of the recording medium subsequent to printing the first side of the recording medium, reduces a high voltage applied to an electrophotographic process and stops rotational driving  
10 of said image forming section after completing the image formation onto the first side of the recording medium, and carries out paper refeeding after reversing said recording medium, restarting of the rotational driving of said image forming section, and raising of the high voltage of said  
15 electrophotographic process, the restarting of the rotational driving of said image forming section and the raising of the high voltage being performed previously by a period of time equal to a sum of a rising time of the rotation of said image forming section and a rising time  
20 of the high voltage of said electrophotographic process in order to complete the rising of the high voltage of the electrophotographic process by the time when starting an image formation of the second side.

25 6. The printing apparatus as claimed in claim 1, further comprising a rotary polygon mirror for exposing said image forming section to light, wherein rotational driving of

said rotary polygon mirror is continued even when rotation of said fixing pressurizing rollers or rotation of said image forming section is halted subsequent to printing the first side of the recording medium and before printing the  
5 second side of the recording medium.

7. The printing apparatus as claimed in claim 1, further comprising heater driving control means for halting heater driving for heating said fixing pressurizing rollers as  
10 long as the rotation of said fixing pressurizing rollers is halted, when printing the second side of the recording medium subsequent to printing the first side of the recording medium.

15 8. The printing apparatus as claimed in claim 1, further comprising heater driving control means for carrying out heater driving that heats said fixing pressurizing rollers at a first temperature in a standby mode during which printing is not performed, for carrying out heater driving that heats  
20 said fixing pressurizing rollers at a second temperature in a printing condition during which printing is performed, and for carrying out heater driving that heats said fixing pressurizing rollers at a third temperature as long as the rotation of said fixing pressurizing rollers is halted,  
25 when printing the second side of the recording medium subsequent to printing the first side of the recording medium.

9. The printing apparatus as claimed in claim 8, wherein the third temperature is higher than the first temperature, and lower than or equal to the second temperature.

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10. The printing apparatus as claimed in claim 1, wherein said fixing unit consists of a hot roller type fixing unit.

11. The printing apparatus as claimed in claim 1, wherein  
10 said fixing unit consists of a film heating type fixing unit.

12. A printing apparatus comprising:

an image forming section for carrying out image  
15 formation on a recording medium using an electrophotographic method;

a fixing unit for printing an image by fixing an image on the recording medium thereto by heating and pressurizing the recording medium, which is transported from said image  
20 forming section, with a pair of fixing pressurizing rollers;

a reversing mechanism for reversing the recording medium having its first side printed with the image, to print an image on a second side of the recording medium;

a paper refeed mechanism for refeeding the recording  
25 medium reversed by said reversing mechanism;

print reservation means for reserving a printing operation performed by said image forming section, fixing

unit, reversing mechanism and paper reefed mechanism in response to a reservation instruction as to the printing operation specifying a printing condition, and for storing into a memory the printing condition of the printing  
5 operation reserved;

print control means for carrying out the reserved printing operation under the printing condition stored in said memory; and

decision means for making a decision as to whether  
10 printing of the second side of the recording medium is carried out subsequent to printing the first side of the recording medium.

13. The printing apparatus as claimed in claim 12, wherein  
15 said decision means makes a decision, when an image formation of the first side is completed, as to whether printing of the second side of the recording medium is carried out subsequent to printing the first side of the recording medium in accordance with printing condition of a next reserved  
20 printing operation.

14. The printing apparatus as claimed in claim 12, wherein  
said decision means makes a decision, when fixing of the first side is completed, as to whether printing of the second  
25 side of the recording medium is carried out subsequent to printing the first side of the recording medium in accordance with printing condition of a next reserved printing

operation.

15. The printing apparatus as claimed in claim 12, wherein said print control means further carries out:

5       shifting its processing to a standby mode after completing printing of the first side, when no printing condition reserved next to the printing of the first side of the recording medium is present, by dropping the high voltage of the electrophotographic process, by stopping  
10 rotational driving of said image forming section, by halting rotational driving of said fixing pressurizing rollers, by reducing the temperature of the heater driving for heating said fixing pressurizing rollers, and by stopping  
rotational driving of said scanner motor for carrying out  
15 scanning of said electrophotographic process;

      shifting its processing to printing operation of the second side, when a printing condition reserved next to the printing of the first side of the recording medium is associated with the second side of the recording medium,  
20 by dropping the high voltage of the electrophotographic process, by stopping rotational driving of said image forming section, by halting rotational driving of said fixing pressurizing rollers, and by reducing the  
temperature of the heater driving for the fixing, and  
25 simultaneously with the refeeding of the second side, by restarting the rotational driving of said image forming section, by raising the high voltage of the

electrophotographic process, by restarting the rotational driving of said fixing pressurizing rollers, and by increasing the temperature of the heater driving for the fixing; and

5       shifting its processing to printing operation associated with the next reserved printing condition, when the next reserved printing condition at a time the printing operation of the first side of the recording medium is completed differs from a printing condition of the second  
10 side of the recording medium, by dropping the high voltage of said electrophotographic process without stopping the rotational driving of said image forming section.

16. The printing apparatus as claimed in claim 15, wherein  
15 when a printing operation is impossible even though the printing condition reserved next to the printing of the first side of the recording medium is present, said print control means shifts its processing to standby mode by dropping the high voltage of the electrophotographic  
20 process, by stopping rotational driving of said image forming section, by halting rotational driving of said fixing pressurizing rollers, by reducing the temperature of the heater driving for fixing, and by stopping rotational driving of said scanner motor for carrying out scanning  
25 of said electrophotographic process.

17. The printing apparatus as claimed in claim 12, further



comprising heater driving control means for halting heater driving for heating said fixing pressurizing rollers as long as the rotation of said fixing pressurizing rollers is halted, when printing the second side of the recording medium subsequent to printing the first side of the recording medium.

18. The printing apparatus as claimed in claim 12, wherein said fixing unit consists of a hot roller type fixing unit.

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19. The printing apparatus as claimed in claim 12, wherein said fixing unit consists of a film heating type fixing unit.